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EXAMINER

BURCH, MELODY M

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/695,874

Applicant(s)

UMEHARA ET AL.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-11, 13-16 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-11, 13-16, 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 7, 10, and 20-22 are objected to because of the following informalities:

- the phrase "the other side of said reaction pawl" should be changed to "the other side of molding said reaction pawl" to maintain consistent terminology.

The remaining claims are objected to due to their dependency from claim 7.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 19. The phrase the phrase "a sprue formed a the bottom portion of said cylinder" and the phrase "the caliper body is molded with a cavity disposed with a union hole" lead to confusion since it is unclear to the Examiner whether the sprue is intended to form a portion of the union hole as recited in the other independent claims. The last sentence of the claim which includes the phrase "the union hole is formed by processing the sprue after the casting" leads one to believe that the union hole and the

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sprue are different elements. Clarification is required. Claim 25 is indefinite due to its dependency from claim 19.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 9, 13-17, 19, 23, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 in view of US Patent 4705093 to Ogino.

Re: claims 6, 9, 14, 15, 16, 17, 23, 24, and 25. JP-835530 shows in figure 1 a caliper body of a vehicular disc brake, the vehicular disc brake inherently having a pair of frictional pads disposed opposite to each other with a disc rotor held therebetween, the caliper body including a cylinder 2 disposed on one side of the disc rotor, a reaction pawl 1 disposed on the other side of the disc rotor, and a bridge portion "a" for coupling the cylinder and the reaction pawl at the outer peripheral side of the disc rotor, the caliper body comprising: a union hole shown surrounding element number 5 formed at the bottom portion of the cylinder of the caliper body capable of being used as a sprue for molding the caliper body with a base material and a cavity shown in the area of element number 4 disposed with the union hole, but does not specifically disclose the limitation of the caliper body being made by a casting method with a base material while the side of molding the bottom portion of the of the cylinder is disposed in a vertically

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upper part of the cavity and also the side of molding the reaction pawl is disposed in a vertically lower part of the cavity.

Ogino teaches in teaches in col. 2 lines 18-21 the use of a gravity casting method to make a caliper body. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of making the caliper body of JP-835530 to have included gravity casting (inherently resulting in the side of molding the bottom portion of the of the cylinder, which includes the opening for the molten material, being disposed in a vertically upper part of the cavity and the side of molding the reaction pawl being disposed in a vertically lower part of the cavity), as taught by Ogino et al., in order to provide a well-known means of forming the whole shape of the caliper body.

Re: claim 13. Ogino teaches the use of the base material being aluminum or aluminum alloy in col. 2 lines 12-13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the material of JP-835530 to have included aluminum or aluminum alloy, as taught by Ogino, in order to provide a base material that is both lightweight and sufficiently rigid.

Re: claim 19. JP-835530 shows a flange portion shown in the area of the lead lines associated with element number 5 and letter b shown to the right of the outer face of element 2 formed by processing the sprue after a casting to the same extent as Applicant's since a similar product is shown.

6. Claims 7, 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 in view of Ogino as applied to claim 6 above, and further

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in view of JP-1146718. JP-835530 describes the invention substantially as set forth above including the limitation of the side of providing the cylinder being made an action chamber, the side of providing the reaction pawl and the bridge being a reaction chamber, and a thick-walled connection between the cylinder and the bridge is made a central chamber, but does not include the specific volume ratios. JP-1146718 teaches in lines 3-5 and in the last line of the abstract the practice of using optimal volume ratios to achieve little to no sink marks during the cooling process of molten material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the volumes of the various sections of the caliper body of JP-835530, as modified, to have been proportioned to have been in the range of 0.6 to 1.25 for the ratio of the central chamber to the reaction chamber or 0.7 to 1.35 for the ratio of the central chamber to the action chamber or any other optimal volume ratios as determined by routine experimentation, in view of the teachings of JP-1146718, in order to provide a means of minimizing shrinkage and sink marks.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 in view of Ogino as applied to claim 6 above, and further in view of WIPO 98/27353 (using US Patent 6298954 to Weiler et al. as an English equivalent). WIPO 98/27353 teaches in col. 4 lines 13-16 the use of an insert core being incorporated in the casting of a brake caliper body to enable the base material to be injected in symmetry. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the casting procedure of JP-835530, as modified,

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to have included an insert core, as taught by Weiler et al., in order to provide a means of creating symmetrical caliper chamber walls.

8. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 in view of Ogino and JP-1146718 as applied to claim 7 above, and further in view of WIPO 98/27353 (using US Patent 6298954 to Weiler et al. as an English equivalent). WIPO 98/27353 teaches in col. 4 lines 13-16 the use of an insert core being incorporated in the casting of a brake caliper body to enable the base material to be injected in symmetry. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the casting procedure of JP-835530, as modified, to have included an insert core, as taught by Weiler et al., in order to provide a means of creating symmetrical caliper chambers and to inherently cause the base material to run toward the bridge and toward the reaction pawl by virtue of the contact with the peripheral surface of the core in combination with the downward force of gravity.

Response to Arguments

9. Arguments filed 8/19/03 regarding the claims have been considered but are not persuasive.

Applicant initially argued that element 5 of the JP '530 reference cannot be considered the union hole/sprue since it is formed from material b which is different from material a. Examiner reiterates that JP '530 in view of Ogino teaches the use of the area surrounding element 5 of JP '530 representing a sprue used to form a union hole

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resulting in the union hole and the caliper body all being formed of the same material a. In the supplemental amendment Applicant argues that the union hole of JP '530 is not a sprue. Examiner notes that Webster's Collegiate Dictionary 10th Edition defines a sprue as a hole through which metal or plastic is poured into the gate. JP '530, as modified, teaches the use of caliper housing shown in the area of "a" having a union hole shown in the area surrounding element 5. The second to last line of the constitution section of the English abstract of JP '530 teaches the hole in the area of number 5 being used for the entrance of fluid. Ogino teaches the use of forming a caliper body by gravity casting. Since gravity casting includes a method of pouring a fluid into a hole to mold an object, Examiner maintains that JP '530, as modified, teaches the use of the union hole forming a sprue since JP '530 admits that the hole is used for the entrance of fluid and since no other hole for the entrance of fluid is shown on the caliper body.

Applicant also argues that JP '530 does not show that a flange portion of the union hole is formed by processing the sprue after the casting. As best understood with regards to claim 19, Examiner has interpreted the sprue and the union hole as being two different elements (see the 112 rejection of claim 19 above). In light of the interpretation, it is noted that element 5 of JP '530 is designated as the sprue which is processed or formed of material b and connected to the union hole (the area surrounding element 5) after casting of the caliper body formed of material a to form a flange portion of the union hole shown to the right of the lead lines of elements 4 and b.

With regards to the ratio volumes, Applicant states in the specification that the volume ratios are critical in order to provide control of the solidification of the molten

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material in such a way that no sink marks are produced. Examiner maintains that JP-1146718 teaches the use of optimal volume ratios to achieve little to no sink marks during the cooling process or solidification of the molten material. Examiner maintains that, in light of the teachings of JP-1146718, one of ordinary skill in the brake art would achieve appropriate volume ratios including but not limited to the claimed ratios depending on the caliper application/environment through routine experimentation. See *In re Jones*, 162 USPQ 224. Examiner suggests submitting an affidavit to document any unexpected results from the use of the specific claimed volume ratios.

Examiner also notes that, in regards to Applicant's drawing and accompanying discussion on pg. 8 of the remarks of the supplemental amendment filed 8/19/03 and, in general, to the apparatus claims including limitations directed to the method of making the caliper body, the patentability of a product does not depend on its method of production. According to MPEP 2113 the patentability of a product does not depend on its method of production. Section 2113 goes on to state that if the product in the product-by-process claim is the same as or obvious from a prior art product, the claim is unpatentable even though the prior product was made by a different process. In *re Thorpe*, 777 F.2d 695,698,227 USPQ 964, 966 (Fed. Cir. 1985).

Finally, as discussed in the remarks filed 8/19/03 Applicant's representative discussed many types of casting methods using a power point presentation that also included a photograph of a gravity casted caliper labeled as "conventional" having two long sprues projecting from the upper portion of the caliper body. Examiner requests a copy of the photograph of the gravity casted caliper labeled "conventional" for further

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review as it appears that the photograph may be considered prior art. Applicant is reminded of the duty to disclose to the Office all information known to that individual to be material to patentability.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb 8/27/03
mmb
August 27, 2003

M. C. Graham
8/28/2003
MATTHEW C. GRAHAM
PRIMARY EXAMINER
GROUP 310